

Vehicular Communication: An Overview from OICA

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A decorative graphic in the top-left corner featuring a network of blue lines and nodes on a dark background, resembling a digital or communication network.

@ Introduction

Vehicular communication plays a pivotal role in enhancing modern transportation systems, enabling vehicles to share information and data with each other and the surrounding infrastructure for improved safety, efficiency, and user experience.



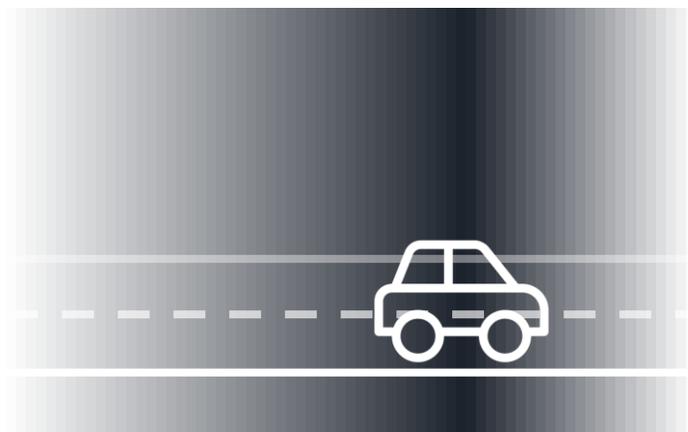
Vehicular Communication



The sixth sense for road safety



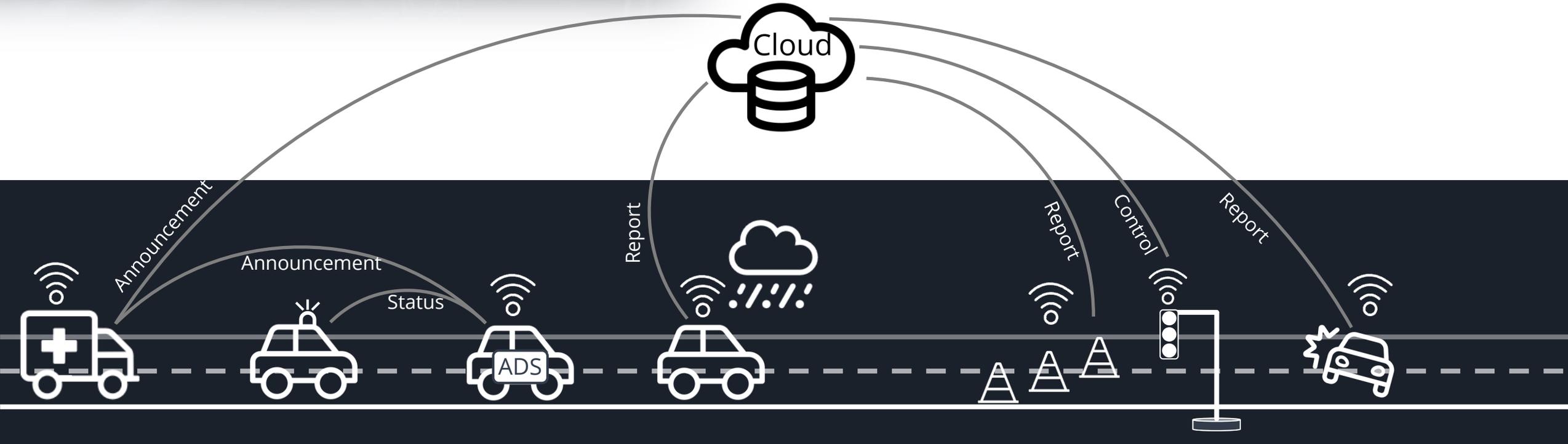
Vehicular Communication



Road users today in particular still drive “on sight” in the truest sense of the word. Road safety can be greatly increased by the additional information that is made available to us by Vehicular communication.



Vehicular Communication

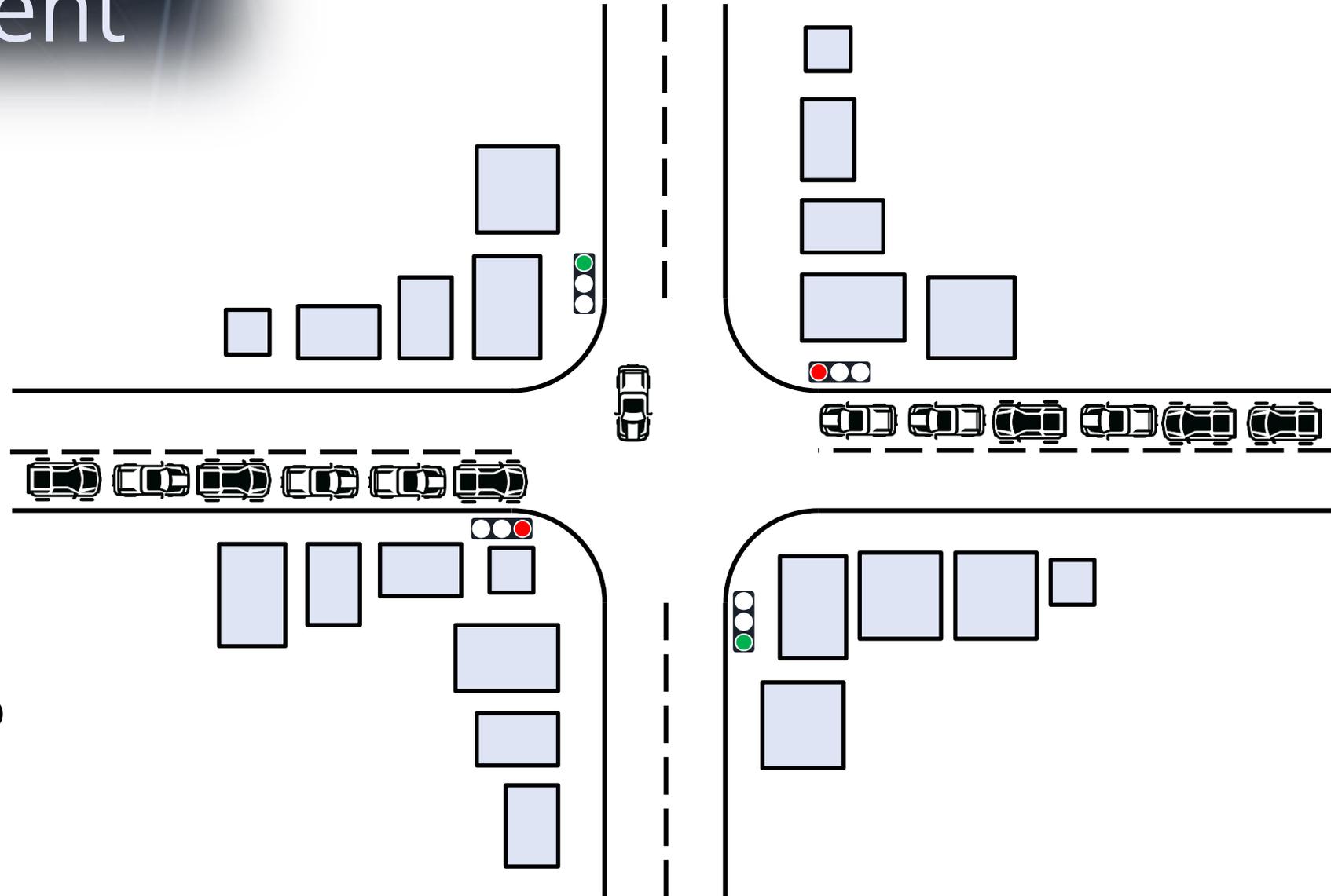


With Vehicular communication, road users are better connected, especially with regard to emergency vehicles. Safety and sustainability could be increased for each individual road user. Vehicle Status Report (e.g. ADS Status) is available to selected and authorized parties.



Traffic Management

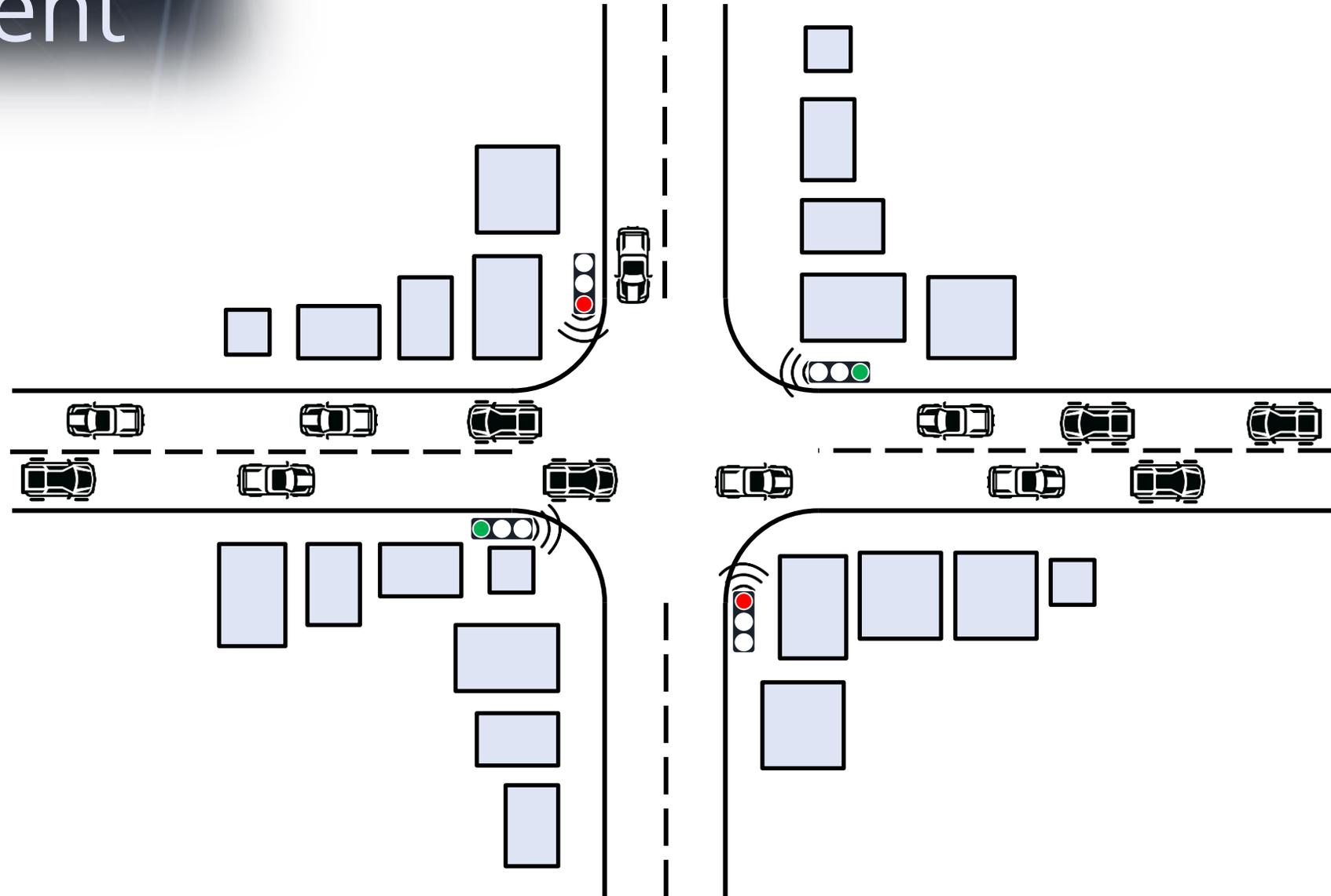
- Higher pollution on the spot due to waiting vehicles
- Greater pollution due to inefficient starting and braking





Traffic Management

- Active Traffic management creates a better traffic flow which is automatically more efficient





Vehicular Communication



Tackle everything that's needed



Overview

Definition

Referring to the technology that enables the exchange of information between vehicles and between vehicles and their surroundings, using both wired and wireless communications technologies.

Structure

Categorizing into wired communications (e.g., OBD port, vehicle charging equipment) and wireless communications (RFID, NFC, Bluetooth, Wi-Fi, Cellular, Satellite).

Value

Enhancing road safety, reducing transport costs, improving efficiency, elevating transport experience, and minimizing environmental impacts.

USECASES

Safety & Energy

Including vehicle operation safety, infrastructure operator information, emergency services, collision warning and avoidance, protecting vulnerable road users, and emergency alerts.

Traffic Management

Assisting in road transport infrastructure management, road works information, traffic signal optimization, real-time traffic updates, and event management.

In-Vehicle Experience

Improving the in-vehicle experience through infotainment, convenience applications, remote activations, charging support, and payment services.

AD Support

Supporting ADS deployment, providing real-time updates for road conditions, facilitating cooperative automated driving, and enhancing safety and efficiency.

Challenges

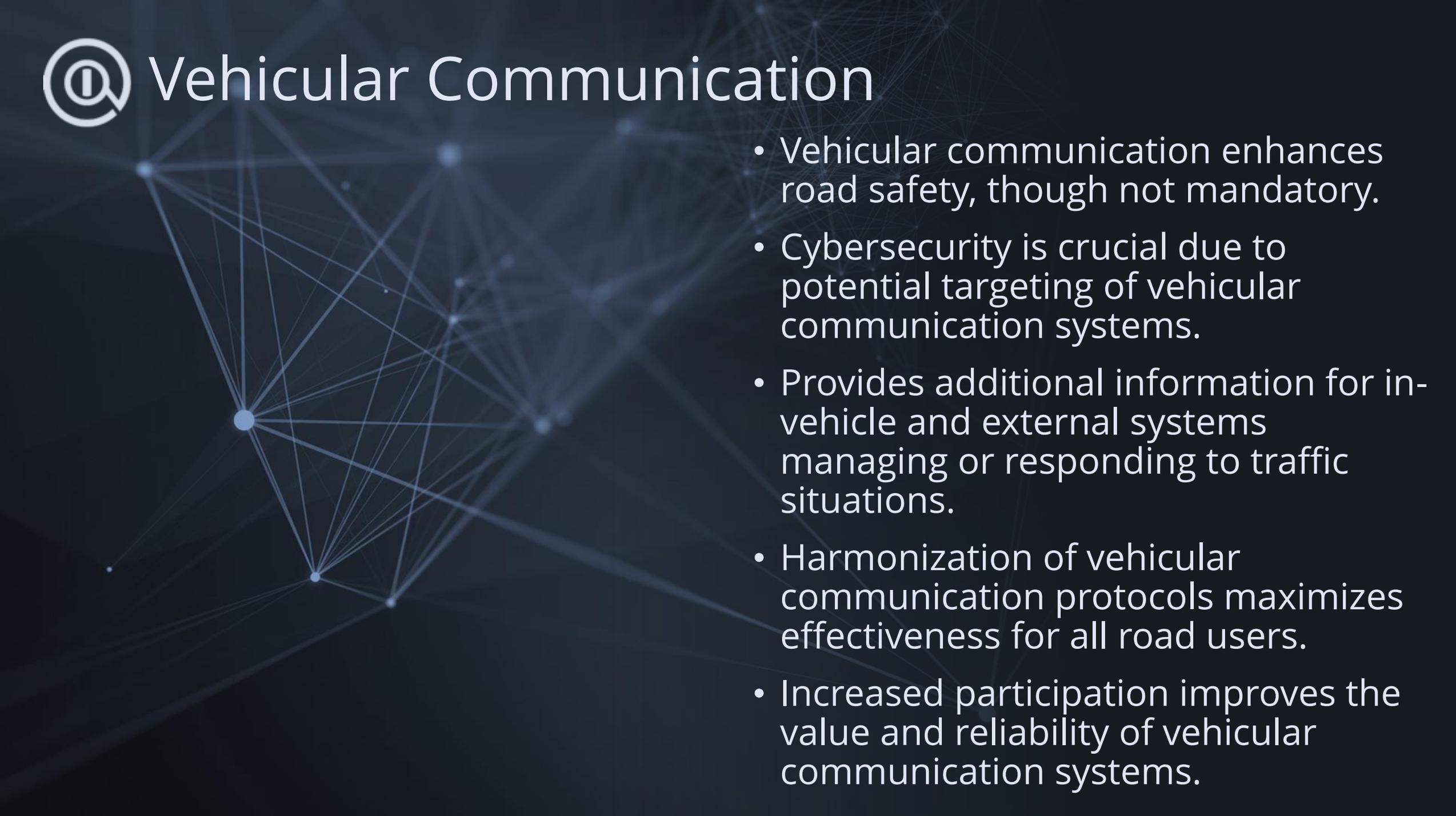
Including cybersecurity risks, privacy concerns, interference issues, false information propagation, and potential damage to infrastructure.

Mitigating Challenges

Adopting robust cybersecurity measures, ensuring privacy through data anonymization, managing interference, verifying data authenticity, and reinforcing infrastructure resilience.

Future

The ongoing advancements in vehicular communications technology promise to further enhance road safety, efficiency, and the overall driving experience, paving the way for fully automated and connected transportation systems.



@ Vehicular Communication

- Vehicular communication enhances road safety, though not mandatory.
- Cybersecurity is crucial due to potential targeting of vehicular communication systems.
- Provides additional information for in-vehicle and external systems managing or responding to traffic situations.
- Harmonization of vehicular communication protocols maximizes effectiveness for all road users.
- Increased participation improves the value and reliability of vehicular communication systems.



Uniting industry for a Safer, Smoother Tomorrow

Together, as we align in standardization and regulatory efforts, every stakeholder becomes a key player in revolutionizing road safety and traffic management. Our collective action is paving the way for a future where journeys are not just safer, but smarter and more efficient.





Thank you

for being a part of this journey towards a safer and more efficient future.